

process piping. Valves 12a and 12b remain closed during this process. According to the reverse process flow depicted in FIG. 1C, fluid entering the valve assembly 10 from the process piping can flow through valves 12a and 16b into the column, returning from the column through valve 16a, and exiting the valve assembly through valve 12b back through the process piping. Valves 14a and 14b remain closed during this process. The column may be bypassed altogether according to the process flow depicted in FIG. 1D, where the liquid entering into the valve assembly from the process piping encounters opened valves 12a, 14a, 12b and 14b, exiting the valve assembly without entering the chromatography column which remains inaccessible by closing valves 16a and 16b.

Please replace the fifth full paragraph of column 3 starting at line 20 with the following paragraph:

FIG. 3B is an enlarged cross-sectional view through line 3B-3B of FIG. 3A;

Please replace the first full paragraph of column 4 starting at line 6 with the following paragraph:

Referring now to FIG. 3A, there is shown a top view of the valve assembly, minus the manual bonnets and with a partial cross-sectional view of the underlying channel network drawn in with broken lines. As can be seen in this figure, ports 50, 52, 54 and 56 are arranged at angles of approximately 90° with respect to each other on opposing ends of the octagonal base section of the valve assembly. Each port opens into a chamber in the valve assembly—port 50 opening into chamber 60, port 52 opening into chamber 62, port 54 opening into chamber 64, and port 56

opening into chamber 66. Fluid entering any of the ports encounters a chamber and channels leading to at least two diverter valves. Fluid entering port 52, for example, encounters chamber 62 and channels leading to diverter valves 70 and 72. Fluid entering port 50, for example, encounters chamber 60 and channels leading to diverter valves 70, 76 and 78. The smooth and tortuous network of passageways that lead through the valve assembly connect the ports with the chambers and valves in a such a way that the valve assembly is fully drainable as will be later explained. The flow of the fluid is controlled by the diverter valves 70, 72, 74, 76, 78 and may be adjusted to permit specific flow directions which, in combination with the smooth and tortuous passageways, eliminate dead-legs from the system.

[Please replace the second full paragraph of column 4 starting at line 28 with the following paragraph:]

Referring now to FIG. 3B there is shown an enlarged cross-sectional view of the valve assembly through line 3B-3B of FIG. 3A. As can be seen in the figure, port 50 opens into chamber 60. A passageway 55 leading to diverter valve 76 can also be seen in this figure. Chamber 60 is connected to chamber 64 via diverter valve 78. The passageway that connects these two chambers is inclined, rising sharply before encountering diverter valve 78 and then falling sharply after encountering the valve. The angle of inclination 63 measured from either side of the diverter valve 78 is approximately 30°. In chamber 64, a passageway 65 leading to diverter valve 74 can be seen. Finally in this figure, port 54 can be seen as opening into chamber 64.